

REMARKS

This paper is responsive to a Non-Final Office Action dated June 14, 2006. Claims 1-24 and 44-68 were examined. Claims 25-43 have been withdrawn from consideration pursuant to an election.

Claim Informalities

Examiner objected to claims 3, 6 and 65 based on informalities, which have now been corrected by way of amendment.

Rejections-35 U.S.C. § 101

Claims 1-24, 44-64, and 68 were rejected under 35 U.S.C. § 101 for non-statutory subject matter. In particular, the Office alleges that claims 1-24 and 68 are directed to program code *per se*. Although Applicants disagree with the Office's interpretation, independent claim 1 has been amended to emphasize the statutory nature of the claimed invention(s). Withdrawal of the rejection is respectfully requested.

Claims 44-64 have also been rejected based on the theory that "there is no tangible result of the steps or program" and that they are "directed to a computer program, which is an example of functional descriptive material, *per se*." While Applicants agree that the descriptive material recited in independent claims 44 and 54 is functional, it is also quite clear that the recited functional descriptive material is encoded in a computer readable medium. Independent claims 44 and 54 are therefore statutory. *See* MPEP 2106(IV)(B)(1)(a); *see also In re Lowry*, 32 F.3d 1579, 1583-84, 32 U.S.P.Q.2d (BNA) 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium held statutory). Dependent claims are allowable for at least the same reason. Withdrawal of the rejections is respectfully requested.

Regarding the Office's statement regarding absence of a tangible result, Applicants respectfully disagree both factually and as a matter of substantive law. First, the claims themselves unambiguously recite useful concrete and tangible results, namely encapsulation (by a transactional object) of logical blocks of a data structure and mediation of concurrent non-blocking access to the transactional object. Second, the "useful, concrete and tangible results"

requirement (*see generally*, State Street, AT&T and In re Alappat) upon which the Office apparently bases its rejection, while generally applied *only* to machines and machine-implemented processes, is clearly met in this case as well. Applicant's claims can hardly be characterized as some disembodied mathematic concept representing nothing more than an abstract idea. Claims 44-64 represent statutory subject matter and withdrawal of the § 101 rejection is respectfully requested.

Finally, the Office's suggestion that Applicants' specification defines computer readable medium to include communications media is factually incorrect. The Office's reliance on page 24, lines 1-3 of Applicant's specification is misplaced as the asserted definition does not appear there or elsewhere in the specification. Withdrawal of the § 101 rejection is respectfully requested.

Rejections-35 U.S.C. § 112, first paragraph

Claims 1-23, 44-64 and 68 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully traverse, referring the Office to at least the material beginning on p. 18 of the Specification after the Heading "An Illustrative Implementation" and continuing through page 54. Indeed, Applicants provide a great deal of detail, including description of transactional objects and operations thereon, together with an illustrative API, usage descriptions in a variety of exemplary contexts (such as linked list implementations), and details including data structure definitions and descriptions of specific operations together with implementing code are all presented. Applicants call attention (in particular) to pp. 35-54 of the specification.

In short, those skilled in the art of concurrent programming would certainly be enabled to make and use the claimed invention(s) based on the Applicants' specification. Accordingly, the rejection under § 112, first paragraph, should be withdrawn.

Claims 65-67 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Office construes the claims under U.S.C. § 112, sixth paragraph, but claims to be unable to identify corresponding structure[, material or acts] apparently for the limitation:

means for coordinating concurrent non-blocking execution, by ones
one of the plural processors, of access operations that
manipulate respective logical blocks of a dynamically
sizable data structure, the coordinating means employing
respective instances of a single-target synchronization
primitive to mediate concurrent, non-blocking open-type and
commit-type operations on respective transactional objects
that encapsulate individual ones of the logical blocks.

Applicant describes (and indeed provides example code for) numerous access operations including e.g., `read_committed()` at [1117], `tm_open()` at [1118], `tm_commit()` at [1119] that employ CAS operations (which are one example of a single-target synchronization primitive). Other single-target synchronizations such as LL/SC operation pairs are also described. In any case, access operations are described as functional code executable on a processor. In re Alappat establishes that functional code executable on a general purpose machine constitutes a special purpose machine and the requisite structure corresponding to claim element recited in accordance with § 112, sixth paragraph. Therefore, at least the functional sequences of the access operations that include CAS operations (executable on a processor) constitute sufficient *written description* of the requisite structure, material or act. Section 112, first and sixth paragraphs are therefore satisfied and Applicants respectfully request withdrawal of the rejections.

Rejections-35 U.S.C. § 112, second paragraph

Claims 1-23, 44-64 and 68 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Applicants strongly disagree with the Office's position that the term "implementation" is itself indefinite, particularly when viewed in the context of Applicant's quite detailed description of "An Illustrative Implementation" beginning on p. 18 of the Specification continuing through page 54. Indeed, Applicants provide a great deal of implementation details, including description of transactional objects and operations thereon, together with an illustrative API, usage descriptions in a variety of linked-list contexts, and details including data structure definitions and descriptions of specific operations and implementing code therefor. As before, Applicants call attention to pp. 35-54 of the specification.

In short, Applicants traverse the broad-brush rejection based on “indefiniteness” of the “implementation” as a “relative term.” That said, Applicants have revised claim 1 and those dependent therefrom in a way that likely moots the Office’s rejection. Nonetheless, as applied to remaining independent claims 44 and 54, the rejection should be withdrawn for at least the reasons given above.

Claims 1-23 and 68 were also rejected under 35 U.S.C. § 112, second paragraph, as “unclear.” In claim 1 (as amended), the apparently unclear phrase “[a dynamically sizable data structure] instantiated in shared storage managed thereby” means a dynamically sizable data structure instantiated in shared storage managed by the software transactional memory. Applicant respectfully submits that the claims are sufficiently definite and precise to apprise persons of skill in the concurrent programming arts of the scope of the invention. Withdrawal of the rejection is requested.

Finally, claims 65-67 were also rejected under 35 U.S.C. § 112, second paragraph, as indefinite, essentially for the same reasons as given above with respect to the first paragraph rejection. As described more completely above, specific access operations are described in the specification as functional code executable on a processor. In re Alappat establishes that functional code executable on a general purpose machine constitutes a special purpose machine and the requisite structure corresponding to claim element recited in accordance with § 112, sixth paragraph. Therefore, at least those functional sequences of the access operations that include CAS operations (executable on a processor) constitute sufficient requisite structure, material or act necessary to point out and distinctly claim within the meaning of the statute. Section 112, second and sixth paragraphs are therefore satisfied and Applicants respectfully request withdrawal of the rejections.

Conclusion

In summary, claims 1-68 are in the case, of which claims 25-43 have been withdrawn. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully requested. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

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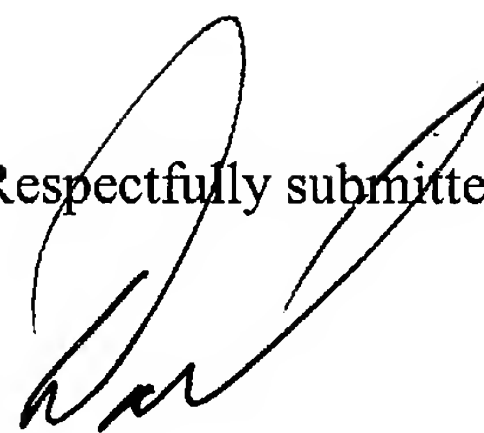
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Respectfully submitted,



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